

# Notice of Allowability

Application No.

10/808,526

Examiner

Nam Huynh

Applicant(s)

NAGAI, MAKOTO

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to personal interview conducted on 7/24/2007.
2. ☒ The allowed claim(s) is/are 1,4,6,9 and 12.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 7/24/07.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
GEORGE ENG  
SUPERVISORY PATENT EXAMINER

## DETAILED ACTION

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a personal interview with Tomoki Tanida on 7/24/2007.

#### Claims

5. Cancelled

9. A **computer readable medium storing a** program executable by a computer, the program **causing the computer to perform** including the functions of:

receiving the signals from a terminal apparatus which is a targeted communication party, each of the signals corresponding to one of a plurality of modulation methods;

detecting, from the signals received by said receiving, permissible delay time in data communication corresponding to an application used in said terminal apparatus;

deriving from the received signals a value indicative of the quality of a communication line;

determining a modulation method to be used for data for the terminal apparatus and the number of channels per frame to be allocated to the terminal apparatus, in a communication line that contains a plurality of channels in a frame, according to the

permissible delay time detected by said detecting, so that the communication rate as determined by the modulation method and the number of channels approaches a predetermined value; and

instructing the terminal apparatus to perform communication of data corresponding to the application by using the modulation method and the number of channels determined by said determining, wherein

if the detected permissible delay time is greater than a predetermined threshold value, the determining function determines to use a modulation method capable of transmitting a relatively large amount of data according to the quality of a communication line, and, subsequently, to use a relatively small number of channels and

if the detected permissible delay time is less than or equal to the predetermined threshold value, the determining function determines to use a relatively large number of channels in accordance with the number of unoccupied channels, and, subsequently, to use a modulation method that ensures a relatively low error rate.

***Allowable Subject Matter***

2. Claims 1, 4, 6, 9, and 12 are allowed.
3. The following is an examiner's statement of reasons for allowance:

The present invention pertains to allocating channels to a plurality of terminals multiplexed by a base station that takes into consideration the type of application used and current usage status of channels, and providing a base station and a communication system utilizing the aforementioned channel allocating method. The

object of the invention is to determine the transmission speed between a base station and a terminal according to the amount of information to be transmitted, i.e. the size of the packet, thereby minimizing variation of transmission time between the base station and terminal.

The novelty of the invention lies in the combination of all the steps or functions performed as set forth in the claims. In the scope of the invention, a base station determines a modulation method and number of channels to allocate to a terminal by detecting parameters, which are permissible delay corresponding to an application used in the terminal and the quality of the communication line, so that the communication rate approaches a predetermined value. The terminal is then instructed to perform communication using a small or large number of channels based on these detected parameters.

Accordingly, Applicant's claims are allowed for these reasons and for the reasons recited by the Applicant in the amendment filed on 4/9/2007.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Asano (US 2002/0142732) – Asano teaches determining a modulation method to be used in a signal transmission based on an evaluated transmission condition (abstract). This condition can be C/N (carrier to noise ratio) or delay spread (page 3, paragraph 36). Asano teaches that the conversion of the modulation method in the transceiver can be achieved by changing the transmission rate used based on the transmission condition (page 6, paragraph 101), but does not teach or suggest the determining the number of channels to achieve the transmission rate in the detail presented in the claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nam Huynh whose telephone number is 571-272-5970. The examiner can normally be reached on 8 a.m.-5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NTH  
8/2/07

  
GEORGE ENG  
SUPERVISORY PATENT EXAMINER